

Remarks

Support for the Amendments and Status of the Claims

By the foregoing amendments, claims 4-37 are cancelled without prejudice to or disclaimer of the subject matter encompassed thereby, as being drawn to one or more non-elected restriction groups. Applicants reserve the right to prosecute the subject matter of these claims in one or more continuing or divisional applications.

The remaining amendments to the claims are fully supported in the specification as filed, *e.g.*, at page 5, paragraph 013; at page 13, paragraph 0033; at page 24, paragraphs 0103 and 0104; at page 33, paragraph 0139; and in Figures 1A, 1B, 5A, 5D and 16. These amendments therefore add no new matter, and their entry and consideration are respectfully requested. Upon entry of these amendments, claims 1-3, 38 and 39 are pending in the application, with claim 1 being the sole independent claim.

Summary of the Office Action

In the Office Action dated September 14, 2004, the Examiner has made and/or maintained one objection to, and three rejections of, the claims. Applicants respectfully traverse each of these elements of the Office Action in view of the following remarks, and respectfully request that the Examiner reconsider the objections and rejections and that they be withdrawn.

The Objection to Claim 1

In the Office Action at page 2, the Examiner has objected to claim 1 as being informal for reciting "herpes virus" instead of -- herpesvirus --, and has required correction of this claim. By the foregoing amendments, claim 1 has been revised to delete recitation of "herpes virus" and to replace this term with "HSV," thereby obviating this objection. Reconsideration and withdrawal therefore are respectfully requested.

The Rejection Under 35 U.S.C. § 112, Second Paragraph

In the Office Action at pages 2-3, the Examiner has rejected claims 1-3 under 35 U.S.C. § 112, second paragraph, for alleged indefiniteness. Applicants respectfully traverse this rejection.

In making this rejection with regard to claims 1-3, the Examiner first contends that:

[t]he term "herpes simplex virus (HSV)-based amplicon vector" is indefinite. The use of the word "based" makes it unclear as to what needs to be contained within the vector.

Office Action at page 3, lines 5-7. Similarly, in rejecting claim 2, the Examiner contends that:

[t]he term "viral-based vector" is indefinite. The use of the word "based" makes it unclear as to what needs to be contained within the vector.

Office Action at page 3, lines 10-12. Applicants respectfully disagree with these contentions.

The term "HSV-based amplicon" (as an example of an "HSV-based" or "viral-based" vector) is specifically defined throughout the specification, *e.g.*, at page 13, paragraph 0033,

and at page 24, paragraph 0103. Moreover, the contents of such HSV-based amplicon vectors are described throughout the specification, *e.g.*, at page 13, paragraphs 0033-0037, at page 24, paragraphs 0103-0104, and at page 30, paragraph 0128. Finally, the term "viral-based vector" is also familiar to those of ordinary skill from the background art, as discussed in detail in the present specification at pages 2-3, paragraphs 0005-0006. This term is used throughout the present specification and Examples (*see, e.g.*, Example 4 at pages 48-52, and the Conclusion at page 52, paragraph 0184), and in the claims, in a manner that is consistent with the definition of "viral-based" vector that is provided by the art and by the present specification.

As the Board has held:

[35 U.S.C. § 112, second paragraph] merely requires that the claims set forth and circumscribe a particular area with a reasonable degree of precision and particularity. The definiteness of the claim language employed must not be analyzed in a vacuum, but always in light of the teachings of the prior art and of the particular application disclosure as it would be interpreted by one having ordinary skill in the pertinent art.

Ex parte Moelands, 3 USPQ2d 1474, 1476 (Bd. Pat. App. Int. 1987) (citing *In re Moore*, 439 F.2d 1232 (CCPA 1971)). Since the term "viral-based" (or, more specifically, "HSV-based") vector is clearly defined in the present specification and is familiar from the art, one of ordinary skill could easily determine the scope of the vectors that are encompassed by claims 1-3 as currently presented. Hence, claims 1-3 comport with the requirements of 35 U.S.C. § 112, second paragraph, as interpreted under *Moelands* and *Moore*.

In view of the foregoing remarks, Applicants respectfully contend that claims 1-3 are not indefinite. Reconsideration and withdrawal of the rejection of these claims under 35 U.S.C. § 112, second paragraph, therefore are respectfully requested.

The Rejection Under 35 U.S.C. § 102(b)

In the Office Action at pages 3-4, the Examiner has rejected claims 1 and 2 under 35 U.S.C. § 102(b) as allegedly being anticipated by Vos *et al.* (U.S. Patent No. 5,275,942; hereinafter "Vos"). Applicants respectfully traverse this rejection.

Under 35 U.S.C. § 102, a claim can only be anticipated if every element in the claim is expressly or inherently disclosed in a single prior art reference. *See Kalman v. Kimberly Clark Corp.*, 713 F.2d 760, 771 (Fed. Cir. 1983), *cert. denied*, 465 U.S. 1026 (1984). This burden is not met by the disclosure of Vos, which fails to disclose the presently claimed invention.

The invention as presently claimed is drawn to (1) HSV-based amplicon vectors comprising, *inter alia*, (2) a HSV *oris* origin of replication and (3) a HSV *pac* cleavage/packaging signal. None of these elements is disclosed in Vos. First, the vectors disclosed in Vos are not HSV vectors, but are instead lymphotropic herpesvirus vectors such as Epstein-Barr Virus (EBV) (*see* Vos at col. 2, lines 15-16, and cols. 4-5). Second, the origin of replication used in the EBV vectors in Vos is not a HSV *oris* origin of replication, but is instead that of a lymphotropic herpesvirus, such as *ori_P* or *ori_{LYI}* which are EBV origins of replication (*see* Vos at col. 5, lines 19-24). Finally, the cleavage/packaging signal used in the EBV vectors of Vos is not a HSV *pac* cleavage/packaging signal, but is instead

that of a lymphotropic herpesvirus, such as the long terminal repeat region "TR" derived from EBV (*see* Vos at col. 5, lines 19-26).

Hence, the present claims are drawn to vectors that are based on Herpes Simplex viruses, not Epstein-Barr Viruses. As one of ordinary skill would readily understand, although both HSVs and EBVs are members of the herpesvirus family, they represent distinct types of viruses and are not identical. Thus, Vos does not disclose the presently claimed invention and, under *Kalman*, cannot and does not support a rejection of the present claims under 35 U.S.C. § 102(b). Therefore, reconsideration and withdrawal of this rejection are respectfully requested.

The Rejection Under 35 U.S.C. § 103(a)

In the Office Action at pages 4-6, the Examiner has rejected claims 1-3 under 35 U.S.C. § 103(a) as allegedly being obvious over Vos in view of Horsburgh *et al.* (U.S. Patent No. 6,277,621 B1) (hereinafter "Horsburgh"). Applicants respectfully traverse this rejection.

In proceedings before the Patent and Trademark Office, the examiner bears the burden of establishing a *prima facie* case of obviousness based upon the prior art. *See In re Piasecki*, 223 USPQ 785, 787-88 (Fed. Cir. 1984). The Examiner can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references in such a way as to produce the invention as claimed. *See In re Fine*, 5 USPQ2d 1596,1598 (Fed. Cir. 1988). There is no basis for concluding that an

invention would have been obvious solely because it is a combination of elements that were known in the art at the time the invention was made. *See Fromson v. Advance Offset Plate, Inc.*, 755 F.2d 1549, 1556 (Fed. Cir. 1995). Instead, what is needed is a reason, suggestion, or motivation in the prior art that would motivate one of ordinary skill to combine the cited references, and that would also suggest a reasonable likelihood of success in making or using the claimed invention as a result of that combination. *See In re Dow Chem. Co.*, 837 F.2d 469, 473 (Fed. Cir. 1988). In the present case, the Examiner's burden has not been satisfied.

As noted above, Vos does not disclose the use of HSV-based vectors comprising a HSV *oriS* origin of replication and a HSV *pac* cleavage/package signal, and instead is concerned with the use of lymphotropic herpesvirus vectors such as those derived from EBV. Similarly, Horsburgh does not explicitly disclose the use of a HSV *oriS* origin of replication and a HSV *pac* cleavage/package signal in the vectors disclosed therein. Horsburgh only states generically that "a viral origin of replication, and viral packaging signals" (Horsburgh at col. 10, line 41) or "the HSV signals for replication and packaging" (Horsburgh at col. 12, lines 39-40) should be used. However, as one of ordinary skill will be aware, the HSV genome contains multiple origins of replication, not all of which are *oriS* origins. Moreover, the "packaging signals" referred to in Horsburgh do not necessarily specifically refer to *pac* cleavage/package signals as recited in the present claims. Hence, Horsburgh is also deficient with respect to disclosure of the presently claimed invention.

Thus, both of the references cited by the Examiner in this obviousness rejection fail to disclose at least one element of the presently claimed invention. Therefore, it follows that a combination of the disclosures of these references would *not* have led one of ordinary skill

in the art to Applicants' claimed invention. Notwithstanding this fact, Applicants also contend that neither the references themselves, nor the knowledge generally available to those of ordinary skill in the art, provide a suggestion or motivation to modify the cited references or to combine reference teachings. Specifically, Applicants again note that neither Vos nor Horsburgh discloses the use of a HSV *ori_S* origin of replication and a HSV *pac* cleavage/packaging signal, and yet the viral vectors that *are* individually disclosed in Vos and Horsburgh work for their intended purposes. Moreover, it is irrelevant to this rejection whether or not the vectors disclosed in Horsburgh can contain BACs, PACs, YACs, MACs, HACs or cosmids. Such an analysis loses sight of the fact that neither Vos nor Horsburgh explicitly discloses HSV-based vectors with a HSV *ori_S* origin of replication and a HSV *pac* cleavage/packaging signal.

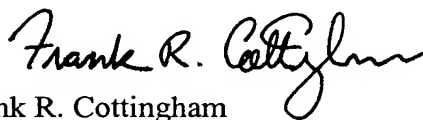
Hence, one of ordinary skill reading Vos would have had no reason to have substituted the EBV-based vectors disclosed therein with HSV-based vectors disclosed in Horsburgh, or vice-versa, since neither the suggestion nor motivation to do so can be found in either reference. Applicants respectfully remind the Examiner that the requisite motivation for establishing a *prima facie* case of obviousness *must* be found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. *See In re Kotzhab*, 217 F.3d 1365, 55 USPQ2d 1313 (Fed. Cir. 2000); *In re Fine*, 5 USPQ2d 1596, 1598 (Fed. Cir. 1999). Since such a suggestion and motivation is not contained within Vos and Horsburgh, and no generally available knowledge has been cited on the record in making this rejection, the two cited references cannot be properly combined in an attempt to support a *prima facie* case of obviousness.

Applicants therefore submit that, upon careful analysis of the cited references, the skilled artisan would have found no motivation to combine or modify the disclosures of the references to arrive at a vector that falls within the scope of the present claims. Accordingly, a *prima facie* case of obviousness has not been established. Therefore, reconsideration and withdrawal of the rejection of the present claims under 35 U.S.C. § 103(a) are respectfully requested.

Conclusion

All of the stated grounds of rejection have been properly traversed. Applicants therefore respectfully request that the Examiner reconsider all outstanding rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and that, as such, the present application is in condition for immediate allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Respectfully submitted,
STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C



Frank R. Cottingham
Attorney for Applicants
Registration No. 50,437

Date: DEC. 14, 2004

1100 New York Avenue, NW
Washington, D.C. 20005-3934
(202) 371-2600
340365_1.DOC